

Defense Information Infrastructure (DII)
Common Operating Environment (COE)

**Software Test Description (STD) and Software Test Report for the
Imagery API and Database Segments (MAIMG and MDIMG)**

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1 SCOPE

1.1 Identification

This Software Description Document (STD) and Software Test Report (STR) describes the test procedures and the report of the results used to verify the Imagery API Segment (MAIMG), and the Imagery Database Segment (MDIMG), Version 4.1 series, of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database. The MAIMG and MDIMG segments provide APIs and a database for the storage, retrieval, and manipulation of Imagery data. This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE), release 3.1, on a Hewlett-Packard computer running HP-UX 10.20 or a personal computer running the Microsoft Windows NT 4.0 operating system with Service Pack 3.

1.2 System Overview

The APIs described in this document form a portion of the METOC Database component of the TESS(NC) Program (NITES Version I). On 29 October 1996, the Oceanographer of the Navy issued a TESS Program Policy statement in letter 3140 Serial 961/6U570953, modifying the Program by calling for five seamless software versions which are Defense Information Infrastructure (DII) Common Operating Environment (COE) compliant, preferably, to level 5.

The five versions are:

- NITES Version I The local data fusion center and principal METOC analysis and forecast system (TESS(NC))
- NITES Version II The subsystem on the JMCIS or GCCS systems (NITES/JMS)
- NITES Version III The unclassified aviation forecast, briefing and display subsystem tailored to Naval METOC shore activities (currently satisfied by the Meteorological Integrated Data Display System (MIDDS))
- NITES Version IV The Portable subsystem composed of independent PCs/workstations and modules for forecaster, satellite, communications, and IC4ISR functions (currently the Interim Mobile Oceanographic Support System (IMOSS))
- NITES Version V Foreign Military Sales (currently satisfied by the Allied Environmental Support System (AESS))

NITES I acquires and assimilates various METOC data for use by US Navy and Marine Corps weather forecasters and tactical planners. NITES I provides these users METOC data, products, and applications necessary to support the warfighter in tactical operations and decision making. NITES I provides METOC data and products to NITES I and NITES II applications, as well as non-TESS(NC) systems requiring METOC data, in a heterogeneous networked computing environment.

The TESS(NC) Concept of Operations and system architecture require that the METOC Database be distributed both in terms of application access to METOC data and products and in terms of physical location of the data repositories. The organizational structure of the database is influenced by these requirements and the components of this distributed database are described below.

In accordance with DII COE database concepts, the METOC Database is composed of six DII COE compliant *shared database* segments. Associated with each shared database segment is an API segment. The segments are arranged by data type as follows:

<u>Data Type</u>	<u>Data Segment</u>	<u>API Segment</u>
Grid Fields	MDGRID	MAGRID
Latitude-longitude-time (LLT) Observations	MDLLT	MALLT
Textual Observation and Bulletins	MDTXT	MATXT
Remotely Sensed Data	MDREM	MAREM
Imagery and Product Data	MDIMG	MAIMG
Climatology Data	MDCLIM	MACLIM

A typical client-server installation is depicted in Figure 1 on the next page. This shows the shared database segments residing on a DII COE SHADE database server, with a NITES I or II client machine hosting the API segments. Communication between API segments and shared database segments is accomplished over the network using ANSI-standard Structured Query Language (SQL).

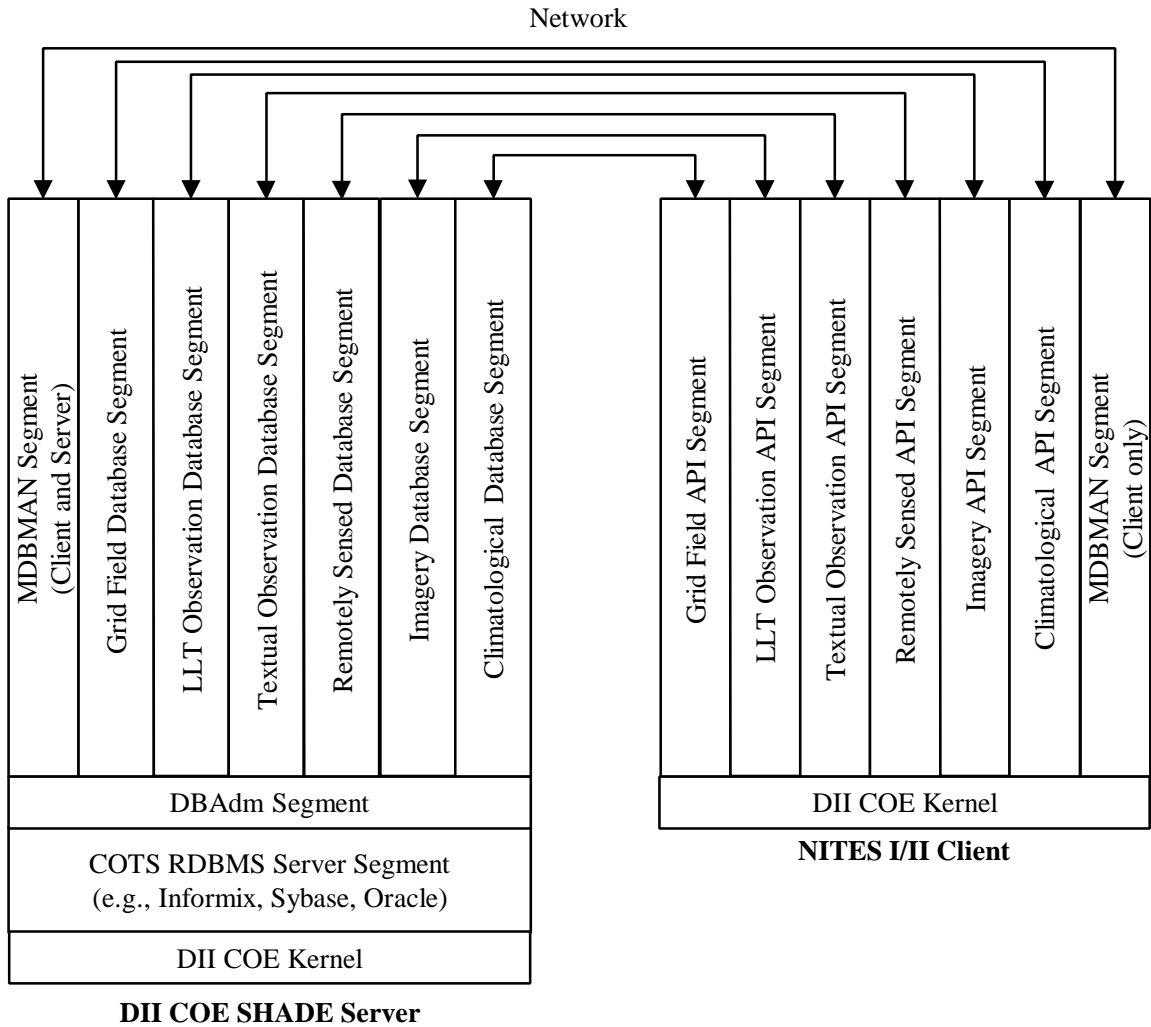


Figure 1. TESS(NC) METOC Database Conceptual Organization

The MAIMG and MDIMG segments deal with imagery products. Imagery products can be associated with a specific geographic point/area as well as time. A number of different formats are supported, they are NITF, MIF, GIF, TIFF, BMP, JPEG, XWD, XBM, PBM, MPEG, and Other.

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2 REFERENCED DOCUMENTS

2.1 Government Documents

STANDARDS

MIL-STD-498 *Software Development and Documentation*
5 December 1994

SPECIFICATIONS

Unnumbered *Performance Specification (PS) for the Tactical Environmental Support*
5 December 1997 *System/Next Century TESS(NC) (AN/UMK-3)*

Unnumbered *Software Requirements Specification for the Tactical Environmental*
30 September 1997 *Support System/Next Century [TESS(3)/NC] Meteorological and*
 Oceanographic (METOC) Database, Space and Naval Warfare Systems
 Command, Environmental Systems Program Office (SPAWAR
 PMW-185), Washington, DC

OTHER DOCUMENTS

Unnumbered *Database Design Description for the Tactical Environmental Support*
30 September 1997 *System/Next Century [TESS(3)/NC] Meteorological and Oceanographic*
 (METOC) Database, Space and Naval Warfare Systems Command,
 Environmental Systems Program Office (SPAWAR PMW-185),
 Washington, DC

DII.COE.DocReqs-5 *Defense Information Infrastructure (DII) Common Operating*
29 April 1997 *Environment (COE) Developer Documentation Requirements, Version 1.0*

Department of the Air Force, Headquarters Air Weather Service, Scott AFB, ILL

AWSR 105-2 *Weather Communications Policies and Procedures*
24 August 1990

Naval Research Laboratory, Marine Meteorology Division, Monterey, CA

Unnumbered 8 July 1998	<i>Programming Manual (PM) for the Imagery API Segment (MAIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database</i>
Unnumbered 8 July 1998	<i>Application Program Interface Reference Manual (APIRM) for the Imagery API Segment (MAIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database</i>
Unnumbered 8 July 1998	<i>Installation Procedures (IP) for the Imagery API Segment (MAIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database</i>
Unnumbered 8 July 1998	<i>Installation Procedures (IP) for the Imagery Database Segment (MDIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database</i>
Unnumbered 8 July 1998	<i>Software Version Description (SVD) for the Imagery API Segment (MAIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database</i>
Unnumbered 8 July 1998	<i>Software Version Description (SVD) for the Imagery Database Segment (MDIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database</i>

2.2 Non-Government Documents

None.

3 TEST PREPARATION

3.1 MAIMG and MDIMG Segments Test Preparation

Segment testing for each of the tests and test cases identified in Section 4 is conducted in the TESS(NC) target hardware and software environment. The approach for all testing with the exception of the installation tests (Section 4.1) is performed using software test driver programs with file or tester provided input data. The goal is to automate the testing to the greatest extent possible (within the schedule constraints) to facilitate general, integration, and regression testing of the segments. The test driver programs used are the same as the test driver programs delivered as part of the API segment delivery. Following API segment installation, the programs are located in the subdirectory: **h/MAIMG/Integ/TestSuite**.

3.1.1 Hardware Preparation

To run the tests described herein, the tester must have installed the database segment (MDIMG) on the test server machine where the DII COE RDBMS and DB administration tools reside. Depending on the test client machine and test case, the tester must also have installed the API segments (MAIMG), on the test server machine, the test client machine, or in some cases, both machines. The hardware requirements for the test are described in Section 3.1.1 of the *Installation Procedure (IP) for the Imagery Database Segment (MDIMG)* and the *Installation Procedure (IP) for the Imagery API Segment (MDIMG)*. Testing of the APIs in the networked client/server configuration (i.e., PC/Windows NT client, HP-UX database server) requires that both client and server machines are connected on an IEEE 802.3/5 local area network supporting the TCP/IP protocol.

3.1.2 Software Preparation

With the exception of the segment installation tests, the imagery segment tests are performed using semi-automated software test driver programs. These test driver programs are HP-UX and Windows NT portable, command line invocable, executable. The programs rely on ASCII text file and manually entered command line inputs for test case data and control. The program output can be written directly to screen or redirected to files for review or permanent capture. Test drivers have been written for both static and dynamic API library verification. Each test driver supports multiple test cases through single or batch processing of the text files. Manual testing is also supported using the command line parameters.

3.1.2.1 Using the Test Driver Programs

The following table identifies the executable test driver programs used to support imagery testing.

Table 3-1. Imagery Test Drivers

Test Driver Name ¹	Test Driver Description	Test
MAIMGtestIngest_d/_l	Ingest (stores) the input imagerys to the database.	4.2
MAIMGtestGetByID_d/_l	Retrieves (selects) imagery from the database according to a specific record ID. Imagerys must be stored (ingested) prior to running this test.	4.3
MAIMGtestGetByQuery_d/_l	Retrieves any number of imagerys from the database for a specified criteria. Imagerys must be stored (ingested) prior to running this test.	4.4
MAIMGtestGetCatalog_d/_l	Retrieves a catalog listing (summary list) of imagerys from the database for a specified criteria. Imagerys must be stored (ingested) prior to running this test.	4.5
MAIMGtestGetTypesInfo_d/_l	Retrieves a list of types and subtypes with the corresponding name of the type and subtype.	4.6
MAIMGtestUpdateByID_d/_l	Updates a single imagery in the database with specific data as input by the tester. Imagerys must be stored (ingested) prior to running this test.	4.7
MAIMGtestDelete_d/_l	Deletes the imagerys from the database for a record ID. Imagerys must be stored (ingested) prior to running this test.	4.8

Note 1: Driver program names end with either a _d or _l, where _d = dynamic API library, and _l = static API library. Programs are otherwise functionally identical. Prior to running the dynamic API test drivers, an environmental variable must be set after a new installation of the MAIMG segment. This procedure is covered in Section 3.1.3 of this document.

3.1.2.2 Command Line Arguments

The command line arguments permit the tester to control the test program, test program inputs, test program output, and exercise the test cases developed for the segment. These arguments also allows the tester to manual enter test data and conditions to exercise segment functionality. Each of the driver programs supports the same set of command line parameter inputs. The following table describes the arguments. The *italicized* text denotes the sample name of a file given by the user and any naming convention is up to the user.

Table 3-2. Imagery Command Line Arguments

Argument	Description
-h	Displays help information about the specific test driver program invoked. e.g., MAIMGtestIngest -h
-d	Turns on the debug macros (DPRINTS) within the APIs causing the display of debug information at runtime. e.g., MAIMGtestIngest -b TESTDATA/INGEST -d
-l <file name>	Saves the manually entered inputs to a file, which can be used to run automated testing in the batch (-b) processing mode. e.g., MAIMGtestIngest -l ingtest2
-b <directory path>	Turns on test driver batch processing mode. Batch processing mode causes the test driver to run the test cases associated with the input files located in the specified directory path. One or more input files can be located in the directory path. e.g., MAIMGtestIngest -b TESTDATA/INGEST

3.1.2.3 Test Input Data

Test driver program inputs are provided either manually through tester interaction with the test program or through the test case oriented ASCII text input files. The input files are delivered with the API segment and loaded onto the target system when the segment is installed. The files are located under the **/h/MAIMG/Integ/TestSuite/TESTDATA** path of the target system. The following table identifies the subdirectory name and applicable test under the TESTDATA path.

Table 3-3. Test Driver Subdirectories and Names

Test	Subdirectory	Description
4.2	INGEST/	This subdirectory contains the imagery ingest test case data files. These files are used in conjunction with the MAIMGtestIngest test drivers.
4.3	GETBYID/	This subdirectory contains the imagery test case files with the parameters required to retrieve observations using the database table name and record ID. These files are used in conjunction with the MAIMGtestGetByID test drivers.

Table 3-3. Test Driver Subdirectories and Names

Test	Subdirectory	Description
4.4	GETBYQY/	This subdirectory contains the imagery test case files with the parameters required to retrieve one or more imagerys for a specified criteria. These files are used in conjunction with the MAIMGtestGetByQuery test drivers.
4.5	CATALOG/	This subdirectory contains the imagery test case files with the parameters required to retrieve a catalog listing of one or more imagerys for a specified criteria. These files are used in conjunction with the MAIMGtestCatalog test drivers.
4.6	GETTYPES	This subdirectory contains the imagery test case files with the parameters required to retrieve a list of types and subtypes from the imagery database. These files are used in conjunction with the MAIMGGetTypesInfo test drivers.
4.7	UPDATE/	This subdirectory contains the imagery test case files with the data fields used to update existing observations stored in the database. These files are used in conjunction with the MAIMGtestUpdate test drivers.
4.8	DELETE/	This subdirectory contains the imagery test case files providing the deletion criteria used to delete observations from the database. in conjunction with the These files are used in conjunction with the MAIMGtestDeleteByID test drivers.
N/A	IMAGES/	This subdirectory stores images that are used in the test cases. These files are used in conjunction with the MAIMGtestIngest test drivers to populate the database with images.

3.1.2.4 Test Output Data

To facilitate review of the desired test cases. Once a test drive is executed on an xterm or console window (see Section 3.1.3 for invoking a window on the HP-UX or NT systems), the user will be able to review debug deprints and/or the status of the driver results. If desired, the test team can redirect these outputs to a file of a specific name for later review. For example, running the ingest test driver with batch (-b) processing, with the INGEST subdirectory test case, with debug deprints, and redirected to the file named *test1*. At the command line the following would be entered at the prompt (/h/MAIMG/Integ/TestSuite>) and executed by selecting the <Enter> button:

➤ `MAIMGtestIngest_1 -b TESTDATA/INGEST -d >test1`

All test results which supports this document are furnished on a 3.5" floppy disk in a "text" format (the debug deprint are not provided). Test Results are discussed in **Appendix B** of this document.

In addition, to ensure the test case ingested the data in the databases on the HP-UX machine. Go to the target machine, open an xterm window and follow the steps in Section 3.1.3 to use DB Access, which will verify that the imagerys were ingested. Each observation can be reviewed to view the various data entries in each.

3.1.3 Other Preparations

3.1.3.1 Establishing an Xterm or console window on the HP-UX and NT platforms

In order to efficiently test the database and API segments, semi-automated software test driver programs were developed. These programs are command line invocable executables that use manual or file inputs to generate redirectable outputs to the display. To operate these driver programs in the DII COE 3.1 software environment requires that an "Xterm" or console window be made available. The following procedures describe how to create the console windows for the HP-UX and Windows NT test environments.

In some of the test cases it maybe necessary for the user to verify the data has been ingested, updated, or deleted in the database located on the HP-UX system. This is accomplished using an xterm window and DB Access with the steps discussed in the Section below.

3.1.3.2 Establishing a console window for a DII COE 3.1 HP-UX System

Log in as *sysadmin* and perform the following steps:

1. Click on the **Application Manager** icon on toolbar.
2. Double-click on the **Desktop_Apps** icon.
3. Double-click on the **Create Action** icon.
4. Enter `xterm` in the **Action Name** field.
5. Click **Find Set...** in the Action Icons panel.
6. In **Icon Folders** list, double-click on `/usr/dt/appconfig/icons/C.`
7. Scroll **Icon Files** list down to the **Dtxterm** icon (a terminal with an X).

8. Click on the **Dtxterm** icon.
9. Click on the **Ok** button.
10. Enter **/usr/bin/X11/xterm -sb -sl 800** in Command field.
11. Enter **This is an xterm** in Help Text field.
12. Select **File/Save** from window menu bar.
13. You should see a **Create Action - Confirmation** window appear.
14. Click **Ok**.
15. Close **Create Action** window.
16. Close **Application Manager** window.
17. Click on the **Home Folder** icon on toolbar.
18. You should see the new action in your folder, and double-click on the new action to launch the folder.

If desired this icon can be installed into the "Personal Applications" pop-up menu panel on the toolbar. This is accomplished by:

1. Click on the **Home Folder** icon on toolbar.
2. Click on the **Personal Application** panel "up arrow" button (above the icon) and drag your new action and drop it on the **Install Icon** button.
3. You should see your new icon appear in the panel.
4. You can move the new icon so it is always visible on the toolbar by right-clicking on the new icon and select **Copy to Main Panel**.

3.1.3.3 Establishing a console window for a Windows NT 4.0 System

The following steps are required to initialize an MS DOS console window on the Windows NT system.

Login as the appropriate user (site dependent) and perform the following steps:

1. Click on the **Start** button at the lower left hand portion of the window.
2. Select **Programs** directly followed by **MS-DOS Prompt**.
3. A *MS-DOS PROMPT* window will be displayed with the DOS command line (C:\) prompt.

3.1.3.4 Setting the Environmental Variable to Run the Dynamic Library API

Before testing the dynamic (shared) library API (_d), the tester must ensure that the environmental variable is set after each fresh installation of the MAIMG segment. This is accomplished by opening an xterm and console window on the HP-UX and NT machines, respectively.

The following steps are required to complete this process:

HP-UX:

1. Open an xterm window.
2. Set the path on the HP-UX by typing:
`setenv SHLIB_PATH/h/MAIMG/bin <Enter>`

NT:

1. Open a DOS window.
2. Set the path by typing:
`set PATH=%PATH%;c:/h/MAIMG/bin <Enter>`

3.1.3.5 Reviewing the Content of the Database using DB Access

When running the test drivers and associated test cases for Ingest, Update, Delete it may be necessary to review the affected changes in the database located on the HP-UX machine. This is facilitated by running the Informix DB Access tool by opening an xterm window on the target machine and completing the following steps:

1. In the xterm, change directories to the informix bin directory:
`>cd /opt/informix/bin`
2. Set the environmental variable in the xterm by typing:
`>setenv TERM vt100`
3. Run dbaccess by typing:
`>dbaccess`
4. Once in dbaccess, select **Query Language** from menu (default selection) and press < return>
5. Use up/down arrows to select database of interest (e.g., MDIMG) then press <return>

6. The user is provided several menu options. These options can be selected by either typing the first letter of the option (e.g., typing **I** for Info), or using the arrow keys and <return> to select an option.
7. To view the list of data sets in the database by name, select **Info** and the list of data sets will be displayed. Select <return> then **E** for exit.
8. To view records in a data set (the data set name is required), select **New** and type:
`select * from datasetname` and press <escape> and then select **Run**.
9. This result will display the ingested records stored in the informix database as applied by the ingest test case. The list will show the exact data fields for each observation stored in the database. If there is more than one page, select **Next** from the menu until all records have been displayed.
10. To exit dbaccess, use the **Exit** menu selection. User may need to exit several menu levels before actually exiting dbaccess.

4 TEST DESCRIPTIONS

4.1 MDIMG and MAIMG Segment Installation Test

The following test cases comprise a segment installation test to verify that the imagery database and API segments install correctly in the target hardware and software environment.

4.1.1 MDIMG Database Segment Installation Test Case

This test case verifies the correct installation of the MDIMG database segment. MDIMG will be installed using the DII COE provided installation tools on the HP-UX target platform.

4.1.1.1 Prerequisite Conditions

The prerequisite conditions for this test case are defined in Section 3 of the *Installation Procedure (IP) for the Imagery Database Segment (MDIMG) of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorological and Oceanographic (METOC) Database*, version 4.1 or later (herein referred to as MDIMG IP).

4.1.1.2 Test Inputs

There are no test inputs for this test case other than the operator actions identified in Section 4.0 of the MDIMG IP.

4.1.1.3 Expected Test Results

The Segment Installer window will display **METOC Imagery Database Segment** in the Currently Installed Segments Section of the window (See Section 4 of the MDIMG IP).

4.1.1.4 Criteria for Evaluating Results

The Segment Installer tool determines and indicates successful installation of the segment to the tester.

4.1.1.5 Test Procedure

The test procedure is identical to the segment installation instructions provided in Section 4.0 of the MDIMG IP.

4.1.1.6 Assumptions and Constraints

This test assumes the target hardware is operating correctly and configured with the operating and application software identified in Sections 3.1 and 3.2 in the MDIMG IP.

4.1.2 MAIMG API Segment HP Installation Test Case

This test case verifies the correct installation of the HP-UX MAIMG API segment. MAIMG will be installed using the DII COE provided installation tools on the HP-UX target platform. The MAIMG API Segment for HP provides both the dynamic link and static link libraries when installed.

4.1.2.1 Prerequisite Conditions

The prerequisite conditions for this test case are defined in Section 3 of the *Installation Procedure (IP) for the Imagery API Segment (MAIMG) of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorological and Oceanographic (METOC) Database*, version 4.1 or later.

4.1.2.2 Test Inputs

There are no test inputs for this test case other than the operator actions identified in Section 4 of the MAIMG IP.

4.1.2.3 Expected Test Results

The Segment Installer window will display **METOC Imagery API Segment** in the Currently Installed Segments Section of the window (See Section 4 of the MAIMG IP).

4.1.2.4 Criteria for Evaluating Results

The Segment Installer tool determines and indicates successful installation of the segment to the tester.

4.1.2.5 Test Procedure

The test procedure is identical to the segment installation instructions provided in Section 4.0 of the MAIMG IP.

4.1.2.6 Assumptions and Constraints

This test assumes the target hardware is operating correctly and configured with the operating and application software identified in Sections 3.1 and 3.2 in the MAIMG IP.

4.1.3 MAIMG API Segment Windows NT Installation Test Case

This test case verifies the correct installation of the Windows NT version of the MAIMG API segment. MAIMG will be installed using the InstallShield™ software provided with the MAIMG Windows NT Segment. The MAIMG API Segment for Windows NT provides both the dynamic link and static link libraries when installed.

4.1.3.1 Prerequisite Conditions

The prerequisite conditions for this test case are defined in Section 3 of the *Installation Procedure (IP) for the Imagery API Segment (MAIMG) of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorological and Oceanographic (METOC) Database*, version 4.1 or later.

4.1.3.2 Test Inputs

There are no test inputs for this test case other than the operator actions identified in Section 4 of the MAIMG IP.

4.1.3.3 Expected Test Results

The InstallShield™ installation program will display the Installation Complete dialogue box. A directory listing of the C:\h\MAIMG directory and subdirectories will display the dynamic link libraries, static link libraries, API test drivers, and test datasets installed with the segment. Note: The Windows NT Explorer application can be used to view the contents of the directories. Section 4.4 of the MAIMG IP lists the installation directories and contents.

4.1.3.4 Criteria for Evaluating Results

The InstallShield™ installation program determines and indicates successful installation of the segment to the tester. Additionally, the contents of the **C:\h\MAIMG** directory and subdirectories should match the list referenced in Section 4.4 of the IP document.

4.1.3.5 Test Procedure

The test procedure is identical to the segment installation instructions provided in Section 4.0 of the MAIMG IP.

4.1.3.6 Assumptions and Constraints

This test assumes the target hardware is operating correctly and configured with the operating and application software identified in Sections 3.1 and 3.2 in the MAIMG IP.

4.2 Imagery Data Ingest Test

The following test cases verify that the MDIMG database and MAIMG API segments support the ingest and store imagerys.

4.2.1 Ingest Imagery Test Case

This test case will verify that MDIMG and MAIMG correctly store the images identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the storing of each image type/subtype.

In addition, the storage of the these images will have supported the testing of geographic parameters and Year 2000 (Y2K) issues.

4.2.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.

4.2.1.2 Test Inputs

The test inputs necessary for this test case are provided in the **INGEST** test case driver files described in **Appendix A** of this document. These files provide the descriptive parameters and imagery data required for ingest of imagerys to the database.

4.2.1.3 Expected Test Results

The MDIMG database will contain correctly formatted images and associated descriptive data corresponding to the ingested image. Unique record IDs will be generated for each image type/subtype record stored in the database. The detailed expected test results are provided in **Appendix B** of this document.

4.2.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly tested using the database access (dbaccess) tool to query and verify observation data entries have been stored properly and completely. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.2.1.5 Test Procedure

Once the Prerequisite Conditions (4.2.1.1) for the test have been met, the **MAIMGtestIngest** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.2.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.2.2 Multi User Ingest Imagery Test Case

This test case will verify that MDIMG and MAIMG correctly store the Images identified in Section 3.2.4.5 of the METOC Database SRS while simultaneously executing the operation at both the HP-UX and Windows NT machines without error. The test will demonstrate the storing of each image type/subtype.

4.2.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.

4.2.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **INGEST** test case driver files described in **Appendix A** of this document. These files provide the descriptive parameters and imagery data required for ingest of images to the database.

4.2.2.3 Expected Test Results

The MDIMG database will contain correctly formatted images and associated descriptive data corresponding to the ingested images. Since the HP-UX and Windows NT machines are populating the targeted database, twice as many imagerys will be ingested compare to a single

ingest discussed in Section 4.2.1. Unique record IDs will be generated for each image type/subtype record stored in the database. The detailed expected test results are provided in **Appendix B** of this document.

4.2.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly tested using the database access (dbaccess) tool to query and verify observation data entries have been stored properly and completely. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.2.2.5 Test Procedure

Once the Prerequisite Conditions (4.2.2.1) for the test have been met, the **MAIMGtestIngest** test driver program is run by the tester on both the HP-UX and Windows NT platforms simultaneously. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.2.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.3 Imagery Get By ID Test

The following test cases verify that the MDIMG database and MAIMG API segments supporting the retrieval of a single image from the database.

4.3.1 Retrieve Imagery Data with the Get By ID Test Case

This test case will verify that MDIMG and MAIMG correctly retrieves a single image identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the retrieving of a single image using a series of test cases.

4.3.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.3.1.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYID** test case driver files described in **Appendix A** of this document. These files provide the Table Name, Record ID, and File Name required for retrieval of a single image from the database.

4.3.1.3 Expected Test Results

The API will retrieve correctly formatted images and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.3.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.3.1.5 Test Procedure

Once the Prerequisite Conditions (4.3.1.1) for the test have been met, the **MAIMGtestGetByID** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.3.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.3.2 Retrieve Imagery Data with Get By ID Error Test Case

This test case will verify that MDIMG and MAIMG will not retrieve a single image identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate that an erroneous Record ID and Table Name will not retrieve a single image using a series of test cases.

4.3.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.3.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYID** test case driver files described in **Appendix A** of this document. These files provide the Record ID, Table Name, and File Name required for retrieval of a single image from the database.

4.3.2.3 Expected Test Results

The API will not retrieve an image and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.3.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output

information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.3.2.5 Test Procedure

Once the Prerequisite Conditions (4.3.2.1) for the test have been met, the **MAIMGtestGetByID** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.3.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.3.3 Simultaneous Retrieval of a Imagery Data with the Get By ID Test Case

This test case will verify that MDIMG and MAIMG correctly retrieves a single image identified in Section 3.2.4.5 of the METOC Database SRS when executed from the HP-UX and Windows NT machine simultaneously. The test will demonstrate the retrieving of a single image on both systems without error using a series of identical test cases.

4.3.3.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3. of this document.

3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.3.3.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYID** test case driver files described in **Appendix A** of this document. These files provide the Record ID, Table Name, and File Name required for retrieval of a single image from the database.

4.3.3.3 Expected Test Results

The API will retrieve correctly formatted image and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.3.3.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.3.3.5 Test Procedure

Once the Prerequisite Conditions (4.3.3.1) for the test have been met, the **MAIMGtestGetByID** test driver program is run by the tester on both the HP-UX and Windows NT machines simultaneously. The test driver program automatically executes the specified test case. Section

3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.3.3.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.4 Imagery Get By Query

The following test cases verify that the MDIMG database and MAIMG API segments supporting the retrieval of multiple images from the database.

4.4.1 Retrieve Imagery Data with the Get By Query Test Case

This test case will verify that MDIMG and MAIMG correctly retrieves multiple images identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the retrieval of multiple images using a series of test cases.

4.4.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.4.1.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYQY** test case driver files described in **Appendix A** of this document. These files provide data required to query each input field. These fields cover, Type, SubType, Projection Type, Format Type, Lat/Lon, Quality Indicator, Data Category, Basetime, Receipt Time, Title, Description, Security Class, Receipt Method, Originating Site, and Channel, which are used in combination to retrieve multiple images from the database.

4.4.1.3 Expected Test Results

The API will retrieve correctly formatted images and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.4.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.4.1.5 Test Procedure

Once the Prerequisite Conditions (4.4.1.1) for the test have been met, the **MAIMGtestGetByQuery** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.4.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.4.2 Retrieve Imagerys with Get By Query Test Case, Wild Card

This test case will verify that MDIMG and MAIMG correctly retrieves multiple images identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the retrieval of multiple images using a series of test cases that query a set of inputs which are stamped as a wildcard (*).

4.4.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.4.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYQY** test case driver files described in **Appendix A** of this document. These fields cover, Type, Sub Type, Projection Type, Lat/Lon, Quality Indicator, Data Category, Base Time, Receipt Time, title, Description, Security Class, Receipt Method, Originating Site, Channels, which are used in combination to retrieve multiple images from the database.

4.4.2.3 Expected Test Results

The API will retrieve correctly formatted images and associated descriptive data corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.4.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.4.2.5 Test Procedure

Once the Prerequisite Conditions (4.4.2.1) for the test have been met, the **MAIMGtestGETBYQY** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.4.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.4.3 Retrieval of Images with GET BY QY Error Test Case

This test case will verify that MDIMG and MAIMG will not retrieve multiple images identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate that erroneous data will not retrieve multiple images using a series of test cases.

4.4.3.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be "**Up**" for proper connectivity between the API and the Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an "**Up**" status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.4.3.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYQY** test case driver files described in **Appendix A** of this document. These fields cover, Type, Sub Type, Projection Type, Lat/Lon, Quality Indicator, Data Category, Base Time, Receipt Time, title, Description, Security Class, Receipt Method, Originating Site, Channels, which are used in combination to retrieve multiple images from the database.

4.4.3.3 Expected Test Results

The API will not retrieve images and associated descriptive data corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.4.3.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared

with the expected results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.4.3.5 Test Procedure

Once the Prerequisite Conditions (4.4.3.1) for the test have been met, the **MAIMGtestGETBYQY** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.4.3.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and the test driver software identified in Sections 3.1 and 3.2 of this document and MDIMG IP, respectively.

4.4.4 Simultaneous Retrieval of Imagery Data with Get By QY Test Case

This test case will verify that MDIMG and MAIMG correctly retrieves multiple images identified in Section 3.2.4.5 of the METOC Database SRS when executed from the HP-UX and Windows NT machines simultaneously. The test will demonstrate the retrieval of multiple images on both systems without error using a series of identical test cases.

4.4.4.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.

4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.4.4.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETBYQY** test case driver files described in **Appendix A** of this document. These fields cover, Type, SubType, Projection Type, Format Type, Lat/Lon, Quality Indicator, Data Category, Basetime, Receipt Time, Title, Description, Security Class, Receipt Method, Originating Site, and Channel, which are used in combination to retrieve multiple images from the database.

4.4.4.3 Expected Test Results

The API will retrieve correctly formatted images and associated descriptive data corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.4.4.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.4.4.5 Test Procedure

Once the Prerequisite Conditions (4.4.4.1) for the test have been met, the **MAIMGtestGetByQY** test driver program is run by the tester on both the HP-UX and Windows NT machines simultaneously. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.4.4.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.5 Imagery Catalog Listing Test

The following test cases verify that the MDIMG database and MAIMG API segments supporting the retrieval of multiple lists of images from the database.

4.5.1 Retrieval of Imagery Data with Catalog Test Case

This test case will verify that MDIMG and MAIMG correctly retrieves a catalog listing of images identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the retrieval of a catalog list of imagery using a series of test cases.

4.5.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.5.1.2 Test Inputs

The test inputs necessary for this test case are provided in the **CATALOG** test case driver files described in **Appendix A** of this document. These files provide data required to query each input field. These fields cover, Type, SubType, Projection Type, Format Type, Lat/Lon, Quality Indicator, Data Category, Basetime, Receipt Time, Title, Description, Security Class, Receipt Method, Originating Site, and Channel, which are used in combination to retrieve a listing of images from the database.

4.5.1.3 Expected Test Results

The API will retrieve a listing of images corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.5.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.5.1.5 Test Procedure

Once the Prerequisite Conditions (4.5.1.1) for the test have been met, the **MAIMGtestGetCatalog** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.5.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.5.2 Retrieve Images with the Catalog Test Case, Wild Card

This test case will verify that MDIMG and MAIMG correctly retrieves a catalog listing of images identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the retrieval of a listing of available images using a series of test cases that query a set of inputs which are stamped as a wild card (*). This test will also demonstrate the retrieval of specified geographic areas. This may be confusing for the database, especially when making requests across the equator, international data line. This will also test the retrieval of Year 2000 test cases.

4.5.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.5.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **CATALOG** test case driver files described in **Appendix A** of this document. These fields cover, Type, SubType, Projection Type, Format Type, Lat/Lon, Quality Indicator, Data Category, Basetime, Receipt Time, Title,

Description, Security Class, Receipt Method, Originating Site, and Channel, which are used in combination to retrieve a catalog listing of images from the database.

4.5.2.3 Expected Test Results

The API will retrieve a listing of images corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.5.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.5.2.5 Test Procedure

Once the Prerequisite Conditions (4.5.2.1) for the test have been met, the **MAIMGtestGetCatalog** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.5.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.5.3 Retrieve Images with the Catalog Error Test Case

This test case will verify that MDIMG and MAIMG will not retrieve a catalog listing of images identified in Section 3.2.4.5 of the METOC Database SRS that has erroneous query data fields. The test will demonstrate that a variety of erroneous data fields will not retrieve the desired catalog listing of images using a series of test cases.

4.5.3.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this documents.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.5.3.2 Test Inputs

The test inputs necessary for this test case are provided in the **CATALOG** test case driver files described in **Appendix A** of this document. These fields cover, Type, SubType, Projection Type, Format Type, Lat/Lon, Quality Indicator, Data Category, Basetime, Receipt Time, Title, Description, Security Class, Receipt Method, Originating Site, and Channel, which are used in combination to verify that erroneous data will not produce a catalog listing of imagerys from the database.

4.5.3.3 Expected Test Results

The API will not retrieve a listing of available images and associated descriptive data corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.5.3.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.5.3.5 Test Procedure

Once the Prerequisite Conditions (4.5.3.1) for the test have been met, the **MAIMGtestGetCatalog** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.5.3.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.5.4 Simultaneous Retrieval of Images with the Catalog Test Case

This test case will verify that MDIMG and MAIMG correctly retrieves a catalog listing of images identified in Section 3.2.4.5 of the METOC Database SRS when executed from the HP-UX and the Windows NT machines simultaneously. The test will demonstrate the retrieving of a catalog listing of images on both systems without error using a series of identical test cases.

4.5.4.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These

windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.

3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.5.4.2 Test Inputs

The test inputs necessary for this test case are provided in the **CATALOG** test case driver files described in **Appendix A** of this document. These fields cover, Type, SubType, Projection Type, Format Type, Lat/Lon, Quality Indicator, Data Category, Basetime, Receipt Time, Title, Description, Security Class, Receipt Method, Originating Site, and Channel, which are used in combination to retrieve a catalog listing of images from the database.

4.5.4.3 Expected Test Results

The API will retrieve a catalog listing of images and associated descriptive data corresponding to the ingested images. The detailed expected test results are provided in **Appendix B** of this document.

4.5.4.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.5.4.5 Test Procedure

Once the Prerequisite Conditions (4.5.4.1) for the test have been met, the **MAIMGtestGetCatalog** test driver program is run by the tester on both the HP-UX and Windows NT machines simultaneously. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.5.4.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.6 Retrieving Type and Sub Type Information Test

The following test cases verify that the MDIMG database and MAIMG API segments support the retrieval of Type and Sub Type information. This test will also verify multi-usage and the use of wild cards in retrieving Type and Sub Type Information.

4.6.1 Retrieving Type and Sub Type Information Test

This test case will verify that MDIMG and MAIMG correctly retrieve the information corresponding to the types and sub types, identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the retrieval of the information corresponding to the type and subtype specified in the test cases.

4.6.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be "**Up**" for proper connectivity between the API and the Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an "**Up**" status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.6.1.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETTYPES** test case driver files described in **Appendix A** of this document. These fields cover, Type, Sub Type, which are used in combination to retrieve the information corresponding to the types and sub types from the database.

4.6.1.3 Expected Test Results

The API will correctly retrieve the information corresponding to the specified type and sub type. The detailed expected test results are provided in **Appendix B** of this document.

4.6.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.6.1.5 Test Procedure

Once the Prerequisite Conditions (4.6.1.1) for the test have been met, the **MAIMGtestGETTYPESINFO** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.6.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and the test driver software identified in Sections 3.1 and 3.2 of this document and MDIMG IP, respectively.

4.6.2 Retrieving Type and Sub Type Information Test, Wild Card

This test case will verify that MDIMG and MAIMG correctly retrieve the information corresponding to the types and sub types, identified in Section 3.2.4.5 of the METOC Database

SRS. The test will demonstrate the retrieval of the information corresponding to the type or subtype, and by wild carding the other selection.

4.6.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be "**Up**" for proper connectivity between the API and the Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an "**Up**" status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.6.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETTYPES** test case driver files described in **Appendix A** of this document. These fields cover, Type, Sub Type, which are used in combination to retrieve the information corresponding to the types and sub types from the database.

4.6.2.3 Expected Test Results

The API will correctly retrieve the information corresponding to the specified type or sub type, while wild carding the other selection. The detailed expected test results are provided in **Appendix B** of this document.

4.6.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.6.2.5 Test Procedure

Once the Prerequisite Conditions (4.6.2.1) for the test have been met, the **MAIMGtestGETTYPESINFO** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.6.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and the test driver software identified in Sections 3.1 and 3.2 of this document and MDIMG IP, respectively.

4.6.3 Simultaneous Retrieval of Type and Sub Type Information Test

This test case will verify that MDIMG and MAIMG correctly retrieve the information corresponding to the types and sub types, identified in Section 3.2.4.5 of the METOC Database SRS when executed from the HP-UX and the Windows NT machines simultaneously.. The test will demonstrate the retrieval of the information corresponding to the type and subtype specified in the test cases.

4.6.3.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT

machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.

3. The database server must be "**Up**" for proper connectivity between the API and the Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an "**Up**" status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.6.3.2 Test Inputs

The test inputs necessary for this test case are provided in the **GETTYPES** test case driver files described in **Appendix A** of this document. These fields cover, Type, Sub Type, which are used in combination to retrieve the information corresponding to the types and sub types from the database.

4.6.3.3 Expected Test Results

The API will correctly retrieve the information corresponding to the specified type and sub type. The detailed expected test results are provided in **Appendix B** of this document.

4.6.3.4 Criteria for Evaluating Results

The test case outputs derived from the test driver must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected results provided in this document. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.6.3.5 Test Procedure

Once the Prerequisite Conditions (4.6.3.1) for the test have been met, the **MAIMGtestGETTYPESINFO** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.6.3.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and the test driver software identified in Sections 3.1 and 3.2 of this document and MDIMG IP, respectively.

4.7 Updating an Existing Imagery Test

The following test cases verify that the MDIMG database and MAIMG API segments supporting the update of existing images. This test will also verify multi-usage and updates using erroneous data.

4.7.1 Updating an Existing Imagery Test Case

This test case will verify that MDIMG and MAIMG correctly updates imagery data identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the updating of the data fields of existing images in the database. As a result, a new image will be made and it will be marked as edited.

4.7.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.7.1.2 Test Inputs

The test inputs necessary for this test case are provided in the **UPDATE** test case driver files described in **Appendix A** of this document. These files provide data required to query each input field. These fields cover, Record ID, Dataset Name, Image Type, Image SubType, Format Type, Lat/Lon, Title, Description, Quality Indicator, Data Category, Security Class, Originating Site, Compression, Receipt Method, Basetime, and Calibration Table Size, which are used in combination to update the data within the imagerys of the database.

4.7.1.3 Expected Test Results

The API will update the images corresponding to the input changes. The detailed expected test results are provided in **Appendix B** of this document.

4.7.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester makes use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly test using the Database Access (DB Access) tool to query and verify observation data entries have been updated properly. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.7.1.5 Test Procedure

Once the Prerequisite Conditions (4.7.1.1) for the test have been met, the **MAIMGtestUpdate** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.7.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.7.2 Updating an Existing Imagery with Erroneous Data Test Case

This test case will verify that MDIMG and MAIMG will not update imagery data identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate that erroneous data will not update the data fields of existing images in the database. As a result, the user will be informed that any data entry that does not fit the data structure will be unacceptable.

4.7.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.7.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **UPDATE** test case driver files described in **Appendix A** of this document. These files provide data required to query each input field. These fields cover, Record ID, Dataset Name, Image Type, Image SubType, Format Type, Lat/Lon, Title, Description, Quality Indicator, Data Category, Security Class, Originating Site, Compression, Receipt Method, Basetime, and Calibration Table Size, which are used in combination to update the data within the imagerys of the database.

4.7.2.3 Expected Test Results

The API will update the images corresponding to the input changes. The detailed expected test results are provided in **Appendix B** of this document.

4.7.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester makes use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly test using the Database Access (DB Access) tool to query and verify observation data entries have been updated properly. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.7.2.5 Test Procedure

Once the Prerequisite Conditions (4.7.2.1) for the test have been met, the **MAIMGtestUpdate** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.7.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.7.3 Simultaneous Updating of Existing Imagerys Test Case

This test case will verify that MDIMG and MAIMG correctly update imagery data identified in Section 3.2.4.5 of the METOC Database SRS when executed from both the HP-UX and the Windows NT machines simultaneously. The test will demonstrate that updating data fields of existing images in the database on both systems without error using a series of identical test cases.

4.7.3.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.7.3.2 Test Inputs

The test inputs necessary for this test case are provided in the **Update** test case driver files described in **Appendix A** of this document. These files provide data required to query each input field. These fields cover, Record ID, Dataset Name, Image Type, Image SubType, Format Type, Lat/Lon, Title, Description, Quality Indicator, Data Category, Security Class, Originating Site, Compression, Receipt Method, Basetime, and Calibration Table Size, which are used in combination to update the data within the imagerys of the database.

4.7.3.3 Expected Test Results

The API will update the images corresponding to the input changes. The detailed expected test results are provided in **Appendix B** of this document.

4.7.3.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester makes use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output

information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly test using the Database Access (DB Access) tool to query and verify observation data entries have been updated properly. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.7.3.5 Test Procedure

Once the Prerequisite Conditions (4.7.3.1) for the test have been met, the **MAIMGtestUpdate** test driver program is run by the tester on both the HP-UX and Windows NT machines simultaneously. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.7.3.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.8 Deleting a Imagery Test

The following test cases verify that the MDIMG database and MAIMG API segments supporting the deletion of existing images. This test will also verify multi-usage and deletions using erroneous data.

4.8.1 Deleting a Imagery Test Case

This test case will verify that MDIMG and MAIMG correctly deletes a single image identified in Section 3.2.4.5 of the METOC Database SRS. The test will demonstrate the deletion of a single image using a series of test cases.

4.8.1.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.8.1.2 Test Inputs

The test inputs necessary for this test case are provided in the DELETE test case driver files described in **Appendix A** of this document. These files provide the Record ID and Table Name required for deletion of a single image from the database.

4.8.1.3 Expected Test Results

The API will delete an image and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.8.1.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly test using the Database Access (DB Access) tool to query and verify observation data entries have been updated properly. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.8.1.5 Test Procedure

Once the Prerequisite Conditions (4.8.1.1) for the test have been met, the **MAIMGtestDelete** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.8.1.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.8.2 Deleting an Image with the Delete Error Test Case

This test case will verify that MDIMG and MAIMG will not delete a single image identified in Section 3.2.4.5 of the METOC Database SRS that has an erroneous Record ID or Table Name.

The test will demonstrate that an erroneous Record ID or Table Name will not delete a single image using a series of test cases.

4.8.2.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.
2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.8.2.2 Test Inputs

The test inputs necessary for this test case are provided in the **DELETE** test case driver files described in **Appendix A** of this document. These files provide the Record ID and Table Name required for deleting a single image from the database.

4.8.2.3 Expected Test Results

The API will not delete an image and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.8.2.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester makes use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly test using the Database Access (DB Access) tool to query and verify observation data entries have been updated properly. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.8.2.5 Test Procedure

Once the Prerequisite Conditions (4.8.2.1) for the test have been met, the **MAIMGtestDelete** test driver program is run by the tester. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.8.2.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

4.8.3 Simultaneous Deleting an Image with the Delete Test Case

This test case will verify that MDIMG and MAIMG correctly deletes a single image identified in Section 3.2.4.5 of the METOC Database SRS when executed from the HP-UX and Windows NT machine simultaneously. The test will demonstrate the deletion of a single image on both systems with out error using a series of identical test cases. For this particular case either the HP-UX or Windows NT will attempt to delete the requested image, but only one will be successful. The other platform will receive an error that the image does not exist.

4.8.3.1 Prerequisite Conditions

The following conditions must be established prior to executing this test case:

1. Applicable segments are loaded on the target test machines as specified in Section 3 of the MAIMG and MDIMG IP documents.

2. Testing should be conducted while logged in as *sysadmin*. On the HP target platform the tester must be able to initiate and have access to an xterm window. On the Windows NT machine, the tester must be able to initiate and have access to a DOS window. These windows are required to operate the test driver programs and capture output. Procedures for establishing these windows are provided in Section 3.1.3 of this document.
3. The database server must be “**Up**” for proper connectivity between the API and Database. This can be verified by logging in as *dbadmin* and selecting **Server Control** under the Database Control menu bar.
4. To ensure the test environment has a clean database, it is recommended that the database and API segments be deinstalled and then reinstalled. This will clean out any data in the database. Note: The database server should be in an “**Up**” status prior to install/deinstalls. Refer to the segment installation procedures (Section 4 of the MAIMG and MDIMG IP documents) for proper installation procedures.
5. The database must have imagery data available. It may be desirable to run a simulated or real data ingest prior to running this test case.

4.8.3.2 Test Inputs

The test inputs necessary for this test case are provided in the **DELETE** test case driver files described in **Appendix A** of this document. These files provide the Record ID and Table Name required for retrieval of a single image from the database.

4.8.3.3 Expected Test Results

The API will delete a formatted image and associated descriptive data corresponding to the ingested image. The detailed expected test results are provided in **Appendix B** of this document.

4.8.3.4 Criteria for Evaluating Results

The test case outputs derived from the test driver and tester makes use of the database access tool (e.g., Informix DB Access discussed in Section 3.1.3) must match exactly with the Expected Test Results. The range of accuracy is exact with no deviation from the expected result. The output information is compared by re-directing the results to a file using the test driver debug command line argument or conventional screen capture techniques. The file is then viewed and compared with the expected test results provided in this document. The database is directly test using the Database Access (DB Access) tool to query and verify observation data entries have been updated

properly. The test case must be run on both target platforms (HP-UX and Windows NT) and the test results compared to ensure both platforms provide the same results.

4.8.3.5 Test Procedure

Once the Prerequisite Conditions (4.8.3.1) for the test have been met, the **MAIMGtestDelete** test driver program is run by the tester on both the HP-UX and Windows NT machines simultaneously. The test driver program automatically executes the specified test case. Section 3.1.2 of this document describes the procedures required to run the test driver program and obtain the test results.

4.8.3.6 Assumptions and Constraints

This test case assumes the target hardware is operating correctly and configured with the operating, application, and test driver software identified in Sections 3.1 and 3.2 of this document and the MDIMG IP, respectively.

5 REQUIREMENTS TRACEABILITY

All of the test cases discussed in Section 4 of this document were derived from the specifications and requirements referenced in the *Performance Specification (PS) for the Tactical Environmental Support System/Next Century [TESS(NC)] (UN/UMK-3)* and the *Software Requirements Specification for the Tactical Environmental Support System/Next Century [TESS(NC)] Meteorological and Oceanographic (METOC) Database*.

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6 NOTES

6.1 Glossary of Acronyms

AESS	Allied Environmental Support System
API	Application Program Interface
APIRM	API Reference Manual
COE	Common Operating Environment
DBDD	Database Design Description
DID	Data Item Description
DII	Defense Information Infrastructure
GCCS	Global Command and Control System
IC4ISR	Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance
IMOSS	Interim Mobile Oceanographic Support System
JMCIS	Joint Maritime Command Information System
JMS	Joint METOC Segment
MAIMG	Imagery API Segment of the TESS(NC) METOC Database
MDIMG	Imagery Database Segment of the TESS(NC) METOC Database
METOC	Meteorological and Oceanographic
MIDDS	Meteorological Integrated Data Display System
NC	Next Century

PS	Performance Specification
SRS	Software Requirements Specification
TESS	Tactical Environmental Support System

Appendix A - Imagery Segment Test Inputs

The following data and files are required as input data by imagery segment (i.e. MDIMG, MAIMG) testing.

A.1 MDIMG and MAIMG Segment Installation Test

No input data is required by these Test Cases 4.1.1, 4.1.2, and 4.1.3. See associated MDIMG and MAIMG Installation Procedure documents.

A.2 Imagery Data Ingest Test

A.2.1 Ingest Required Imagerys Test Case (4.2.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/TESTDATA/INGEST` directory on the target platform.

Input Filename	Description Type, SubType
p_001000_NONE	Other, None
p_002016_NOFILE	Product, Horizontal Weather Depiction
p_002017	Product, Acoustic Sensor Prediction
p_002018	Product, Atmospheric Sensor Prediction
p_002019	Product, Textual Image
p_002020	Product, Fax
p_002021	Product, Briefing
p_002022	Product, Mission Planning
p_002023	Product, Screen Dump
s_003001	Goes 8, Imager
s_003002	Goes 8, Sounder
s_004001	Goes 9, Imager
s_004002	Goes 9, Sounder
s_005001	Goes 10, Imager
s_005001	Goes 10, Sounder
s_006003	GMS 4, VISSR
s_007003	GMS 5, VISSR

Input Filename	Description Type, SubType
s_008004	GOMS 1N, STR
s_009005	NOAA 9, TOVS-MSU
s_009006_y2k	NOAA 9, TOVS-SSU
s_009007_world	NOAA 9, TOVS-HIRS2
s_009008_IntDatLine	NOAA 9, AVHRR2
s_010005_NOFILE	NOAA 10, TOVS-MSU
s_010006	NOAA 10, TOVS-SSU
s_010007	NOAA 10, TOVS-HIRS2
s_010008	NOAA 10, AVHRR2
s_011005_equator	NOAA 11, TOVS-MSU
s_011006_AOI	NOAA 11, TOVS-SSU
s_011007	NOAA 11, TOVS-HIRS2
s_011008	NOAA 11, AVHRR2
s_012005	NOAA 12, TOVS-MSU
s_012006	NOAA 12, TOVS-SSU
s_012007_y2k	NOAA 12, TOVS-HIRS2
s_012008	NOAA 12, AVHRR2
s_013005_10Calib	NOAA 14, TOVS-MSU
s_013006	NOAA 14, TOVS-SSU
s_013007	NOAA 14, TOVS-HIRS2
s_013008	NOAA 14, AVHRR2
s_014005	NOAA 15, TOVS-MSU
s_014006	NOAA 15, TOVS-SSU
s_014007	NOAA 15, TOVS-HIRS2
s_014008_y2k	NOAA 15, AVHRR2
s_015009	METOSAT 3, VISSR
s_016009_NOFILE	METOSAT 4, VISSR
s_017009	METOSAT 5, VISSR
s_018009	METOSAT 6, VISSR
s_019009	METOSAT 7, VISSR
s_020010_y2k	INSAT 1B, VHRR
s_021010_y2k	INSAT 2A, VHRR
s_022010	INSAT 2B, VHRR
s_023010	INSAT 2C, VHRR
s_024011	DMSP F8, OLS SMOOTH
s_024012	DMSP F8, OLS FINE

Input Filename	Description Type, SubType
s_024013	DMSP F8, SSMI
s_024014	DMSP F8, SSMT
s_025011	DMSP F9, OLS SMOOTH
s_025012	DMSP F9, OLS FINE
s_025013	DMSP F9, SSMI
s_025014	DMSP F9, SSMT
s_026011	DMSP F10, OLS SMOOTH
s_026012_y2k	DMSP F10, OLS FINE
s_026013	DMSP F10, SSMI
s_026014	DMSP F10, SSMT
s_027011_283QualityInd	DMSP F11, OLS SMOOTH
s_027012	DMSP F11, OLS FINE
s_027013_AOI	DMSP F11, SSMI
s_027014	DMSP F11, SSMT
s_027015	DMSP F11, SSMT2
s_028011	DMSP F12, OLS SMOOTH
s_028012	DMSP F12, OLS FINE
s_028013_y2k	DMSP F12, SSMI
s_028014_y2k	DMSP F12, SSMT
s_028015_NOFILE	DMSP F12, SSMT2
s_029011	DMSP F13, OLS SMOOTH
s_029012	DMSP F13, OLS FINE
s_029013	DMSP F13, SSMI
s_029014	DMSP F13, SSMT
s_029015	DMSP F13, SSMT2
s_030011	DMSP F14, OLS SMOOTH
s_030012	DMSP F14, OLS FINE
s_030013	DMSP F14, SSMI
s_030014_NOFILE	DMSP F14, SSMT
s_030015	DMSP F14, SSMT2
s_030011	DMSP F14, OLS SMOOTH
s_030012	DMSP F14, OLS FINE
s_030013	DMSP F14, SSMI
s_030014_NOFILE	DMSP F14, SSMT
s_030015	DMSP F14, SSMT2

The following is an example of the data structure required for the ingesting of a typical imagery:

4	Type
2	Sub Type
5	Format Type
TEST	Title (text)
TEST	Description (text)
0	Quality Indicator
0	Data Category
UNCLAS	Security Class (text)
NET	Receipt Method (text)
NONE	Compression (text)
NAVY	Originating Site (text)
0520199812	Base Time (MMDDYYYYHH)
4	Projection Type
45.000000	North Latitude
-100.000000	West Longitude
-45.000000	South Latitude
30.000000	East Longitude
1	Channel
2	Calibration Table Size
5.000000	
10.000000	
BlueMonday16.bmp	Image Filename

A.2.2 Multi-user Imagery Ingest Test Case (4.2.2) Inputs

The multi-user test ingests all of the images described in A.2.1. The only difference is that the ingest test driver is initiated simultaneously at the HP and Windows NT machines. The database is then checked to verify that duplicate imagerys have been ingested properly.

A.3 Imagery Get By ID Test

A.3.1 Retrieve Imagery Data with the Get By ID Test Case (4.3.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/ TESTDATA/GETBYID` directory on the target platform.

Input Filename	Description
ID_s011007	Retrieves an image with type 11 and subtype 7
ID_s012006	Retrieves an image with type 12 and subtype 6
ID_s018009	Retrieves an image with type 18 and subtype 9
ID_s_009005	Retrieves an image with type 9 and subtype 5
ID_s_010007	Retrieves an image with type 10 and subtype 7
ID_s_013006	Retrieves an image with type 13 and subtype 6
ID_s_019009	Retrieves an image with type 19 and subtype 9
ID_s_023010	Retrieves an image with type 23 and subtype 10

The following is an example of the data structure required for retrieving a typical imagery using the Get By ID:

s009005	Table Name
1	Record ID
TESTFILE31	File Name

A.3.2 Retrieve Imagery Data with the Get By ID Error Test Case (4.3.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/ TESTDATA/GETBYID` directory on the target platform.

Input Filename	Description
ID_x_s_013006_5RecordID	Attempts to retrieve an image with a record ID of 5.
ID_x_s_019011_DupFileName	Attempts to retrieve an image with a non-existent match.
ID_x_s245637	Attempts to retrieve an image with a non-existent match.

A.3.3 Simultaneous Retrieve of Imagery Data with the Get By ID Test Case (4.3.3) Inputs

The multi-user test retrieves all of the imagerys described in A.3.1. The only difference if that the Get By ID test driver is initiated simultaneously at the HP and Windows NT machines.

A.4 Imagery Get By Query Test

A.4.1 Retrieve Imagery Data with the Get By Query Test Case (4.4.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/TESTDATA/GETBYQY` directory on the target platform.

Input Filename	Description
Q_s_009005_ALLDATA	Retrieves an image with type 9 and subtype 5

The following is an example of the data structure required for retrieving a one or more imagerys.

9	Type
5	Sub Type
2	Projection Type
7	Format Type
45.000000	North Latitude
-45.000000	South Latitude
-100.000000	West Longitude
30.000000	East Longitude
0	Quality Indicator
0	Data Category
0520199812	Begin Base Time (mmddyyyyhh)
0520199813	End Base Time (mmddyyyyhh)
*	Begin Receipt Time
*	End Receipt Time
TEST	Title (text)
TEST	Description (text)
UNCLAS	Security Class (text)
NET	Receipt Method (text)
NAVY	Originating Site (text)
1	Channel (text)

A.4.2 Retrieve Imagerys with the Get By Query Test Case, Wild Card (4.4.2) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/TESTDATA/GETBYQY` directory on the target platform. Note, All of these files were used as part of a blanket retrieve discussed in (A.4.1).

Input Filename	Description
Q_s000000_ChAndOrgSite	Retrieves a list of images containing the same channel and originating site.
Q_s000000_NOAOI	Retrieves a list of images containing no area of interest.
Q_s000000_NLat	Retrieves a list of images within a designated area.
C_s000000_ReceiptTime	Retrieves a list of images with the same Receipt Time.
C_s000000_WildAll	Retrieves a list of images that reside in the database.

The following is an example of the data structure required for retrieving a one or more imagerys. The “*” show those areas which maybe wild carded.

*	Type
*	Sub Type
*	Projection Type
*	Format Type
90.0	North Latitude
-90.0	South Latitude
-180.0	West Longitude
180.0	East Longitude
*	Quality Indicator
*	Data Category
*	Begin Base Time
*	End Base Time
*	Begin Receipt Time
*	End Receipt Time
*	Title
*	Description
*	Security Class
*	Receipt Method
*	Originating Site
*	Channel

A.4.3 Retrieve Images with the Get By Qy Error Test Case (4.4.3) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the /h/MAIMG/Integ/TestSuite/TESTDATA/GETBYQY directory on the target platform.

Input Filename	Description
Q_x_s000000_BaseTime	Attempts to retrieve a list of images, and does not find any due to the base time.
Q_x_s000000_FormatType	Attempts to retrieve a list of images, and does not find any due to an invalid format type.
Q_x_s000000_OrgSite	Attempts to retrieve a list of images, and does not find any due to an Originating Site that does not match any dataset in the database.

A.4.4 Simultaneous Retrieval of Images with the Get By QY Test Case (4.4.4) Inputs

The multi-user test retrieves all of the imagery described in A.4.1. The only difference is that the Get By ID test driver is initiated simultaneously at the HP and Windows NT machines.

A.5 Imagery Catalog Listing Test

A.5.1 Retrieve Imagerys Catalog Listing with the Catalog Test Case

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/CATALOG** directory on the target platform.

Input Filename	Description
C_s_009005	Retrieves an image with type 9 and subtype 5
C_s_010006_TYPE	Retrieves an image with type 10 and subtype 6

The following is an example of the data structure required for retrieving a one or more imagerys.

9	Type
5	Sub Type
2	Projection Type
7	Format Type
45.000000	North Latitude
-45.000000	South Latitude
-100.000000	West Longitude
30.000000	East Longitude
0	Quality Indicator
0	Data Category
0520199812	Begin Base Time
0520199813	End Base Time
*	Begin Receipt Time
*	End Receipt Time
TEST	Title
TEST	Description
UNCLAS	Security Class
NET	Receipt Method
NAVY	Originating Site
1	Channel

A.5.2 Retrieve Images with the Catalog Test Case, Wild Card (4.5.2) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/CATALOG** directory on the target platform. Note: All of these files were used as part of a blanket retrieve of a catalog list discussed in A.5.1.

Input Filename	Description
C_s000000_ChAndOrgSite	Retrieves a list of images containing the same channel and originating site.
C_s000000_NOAOI	Retrieves a list of images containing no area of interest.
C_s000000_ReceiptTime	Retrieves a list of images with the same Receipt Time.
C_s000000_TitleAndDesc	Retrieves a list of images with the same Title and Description.
C_s000000_WildAll	Retrieves a list of images that reside in the database.
C_s011007_SomeData	Retrieves an image with a type of 11 and a subtype of 7

The following is an example of the data structure required for retrieving a one or more imagerys. The “*” show those areas which maybe wild carded.

*	Type
*	Sub Type
*	Projection Type
*	Format Type
90.0	North Latitude
-90.0	South Latitude
-180.0	West Longitude
180.0	East Longitude
*	Quality Indicator
*	Data Category
*	Begin Base Time
*	End Base Time
*	Begin Receipt Time
*	End Receipt Time
*	Title
*	Description
*	Security Class
*	Receipt Method
*	Originating Site
*	Channel

A.5.3 Retrieve Images with the Catalog Error Test Case (4.5.3) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/CATALOG** directory on the target platform.

Input Filename	Description
C_x_s000000_ReceiptTime	Attempts to retrieve a list of images but none are found, a bad receipt time was entered.
C_x_s024028_BadTypeAndSub	Attempts to retrieve a list of images but there is a mismatched type and subtype.

A.5.4 Simultaneous Retrieval of Images with the Catalog Test Case (4.5.4) Inputs

The multi-user test retrieves all of the imagerys described in A.5.1. The only difference is that the Catalog test driver is initiated simultaneously at the HP and Windows NT machines.

A.6 Retrieving Types and Sub Types Information Test

A.6.1 Retrieving Types and Sub Type Information Test (4.6.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/TESTDATA/GETTYPES` directory on the target platform.

Input Filename	Description
T_p_002020	Retrieves the type and subtype information for type 2 and subtype 20
T_p_002023	Retrieves the type and subtype information for type 2 and subtype 23
T_s_009008	Retrieves the type and subtype information for type 9 and subtype 8
T_s_014008	Retrieves the type and subtype information for type 14 and subtype 8
T_s_024011	Retrieves the type and subtype information for type 24 and subtype 11
T_s_025013	Retrieves the type and subtype information for type 25 and subtype 13
T_s_027014	Retrieves the type and subtype information for type 27 and subtype 14
T_s_029015	Retrieves the type and subtype information for type 29 and subtype 15

The following is an example of the data structure required to retrieve information on one type and sub type:

9 TypeID
8 SubTypeID

A.6.2 Retrieving Types and Sub Type Information Test, Wild Card (4.6.2) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the `/h/MAIMG/Integ/TestSuite/TESTDATA/GETTYPES` directory on the target platform.

Input Filename	Description
T_s_000000_subtypewild	Retrieves the type and subtype information for type 8 and all subtypes.
T_s_000000_wildall	Retrieves the type and subtype information for all types and subtypes.

A.6.3 Simultaneous Retrieval of Type and Sub Type Information Test, (4.6.3) Inputs

The multi-user test retrieves the same information described in A.6.1. The only difference is that the GetTypeInfo test driver is initiated simultaneously at the HP and Windows NT machines.

A.7 Updating Existing Imagery Data Test

A.7.1 Updating an Existing Images Test Case (4.7.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/UPDATE** directory on the target platform. The database is then checked to verify that the image has been updated.

Input Filename	Description
U_s_006003_ReceiptM	Updates an image's Receipt Method.
U_s_013006_Calib	Updates an image's number of calibrations.
U_s_024014_LatLon	Updates an image's Lat and Lon fields.
U_s_028013_ChانAndProj	Updates an image's Channel and Projection.

A.7.2 Updating an Existing Image with Erroneous Data Test Case (4.7.2) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/UPDATE** directory on the target platform.

Input Filename	Description
U_x_s015009_Record	Attempts to update an image and fails to find the record id.
U_x_s_010008_LatLon	Attempts to update an image and fails due to the Lat/Lon values are out of range.
U_x_s_029012_ChانID	Attempts to update an image and fails due to the incorrect channel ID.

A.7.3 Simultaneous Updating of an Existing Image Test Case (4.7.3) Inputs

The multi-user test updates all of the imagerys described in A.7.1. The only difference is that the update test driver is initiated simultaneously at the HP and Windows NT machines. The database is then checked to verify that the duplicate imagerys have been updated properly.

A.8 Deleting a Imagery Data Test

A.8.1 Imagery Delete Test Case (4.8.1) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/DELETE** directory on the target platform. The database is then checked to verify that the imagery has been deleted.

Input Filename	Description
D_s012007	Deletes an image with a type of 12 and a subtype of 7.
D_s_009008	Deletes an image with a type of 9 and a subtype of 8.
D_s_010005	Deletes an image with a type of 10 and a subtype of 5.
D_s_011006	Deletes an image with a type of 11 and a subtype of 6.
D_s_014009	Deletes an image with a type of 14 and a subtype of 9.
D_s_015009	Deletes an image with a type of 15 and a subtype of 9.
D_s_018009	Deletes an image with a type of 18 and a subtype of 9.
D_s_028013	Deletes an image with a type of 28 and a subtype of 13.
D_s_030014	Deletes an image with a type of 30 and a subtype of 14.
D_s_031014	Deletes an image with a type of 31 and a subtype of 14.

A.8.2 Imagery Delete Test Case with Errors (4.8.2) Inputs

The following files provide the test case data required as inputs. These files and the contents of these files can be found in the **/h/MAIMG/Integ/TestSuite/ TESTDATA/DELETE** directory on the target platform.

Input Filename	Description
D_x_s008004_4RecordID	Attempts to delete an image and fails to find the record id.
D_x_s014008_ID	Attempts to delete an image and fails to find the record id.
D_x_s299999	Attempts to delete an image and fails to find the table name.

A.8.3 Simultaneous Deleting an Image with the Delete Test Case (4.8.3) Inputs

The multi-user test deletes all of the images described in A.8.1. The only difference is that the delete test driver is initiated simultaneously at the HP and Windows NT machines. The database is then checked to verify that the imagerys have been removed.

Appendix B - Imagery Segment Expects and Report of Test Results

B.1 Test Results

For the MAIMG and MDIMG segments, with the exception of the installation procedures, all testing was conducted with the constructed test cases described in **Appendix A**. It should be clarified that the test cases were developed in conjunction with the test drivers to assist the developers with a variety of fairly realistic data inputs and outputs. As a result of this, the test cases described in this document were continuously updated to ensure the end results matched the expected results. In doing so the test team worked closely with the development team to verify reasons for test cases that did not match the expected results.

For this reason the expected results are identical to the planned results when running the final predelivery tests. Test drivers and cases were verified on Configuration Managed (CM) HP-UX and Windows NT 4.0 platforms. Discrepancies were documented using a PTR database. Corrected PTRs were again tested in the CM environment to verify that problems or enhancements were properly resolved (Open and closed PTRs are listed in the Software Version Description documents for the MAIMG and MDIMG segments).

B.2 Problems Encountered

The only major problem encountered with this series of test dealt with the test results output for the NT and HP-UX platforms. When running batch processing, the NT and HP systems will execute the test case files in a different sequence. As a result, when reviewing and comparing the output data for each test, the NT system will show the same results as the HP platform but in a different order or sequence.

B.3 Test Case Results

Due to large amount of output data and results when running the provided test cases in a batch processing mode, the data is provided on a 3.5" floppy disc in a "text" format. Test cases which meet this criteria are annotated in this section.

B.3.1 MDIMG and MAIMG Segment Installation Test

Figure B-1 is a graphic example of the Segment Installer on the HP-UX system. Once the MD/MAIMG segments are properly installed the user will see the segments listed in the Currently Installed Segments portion of the Installer window. In addition, the MD/MAIMG segments will still be listed in the Select Software To Install portion of the Installer window. In this window the installed segments will have a "*" prior to each name. This denotes that the segment is successfully installed on the HP-UX platform.

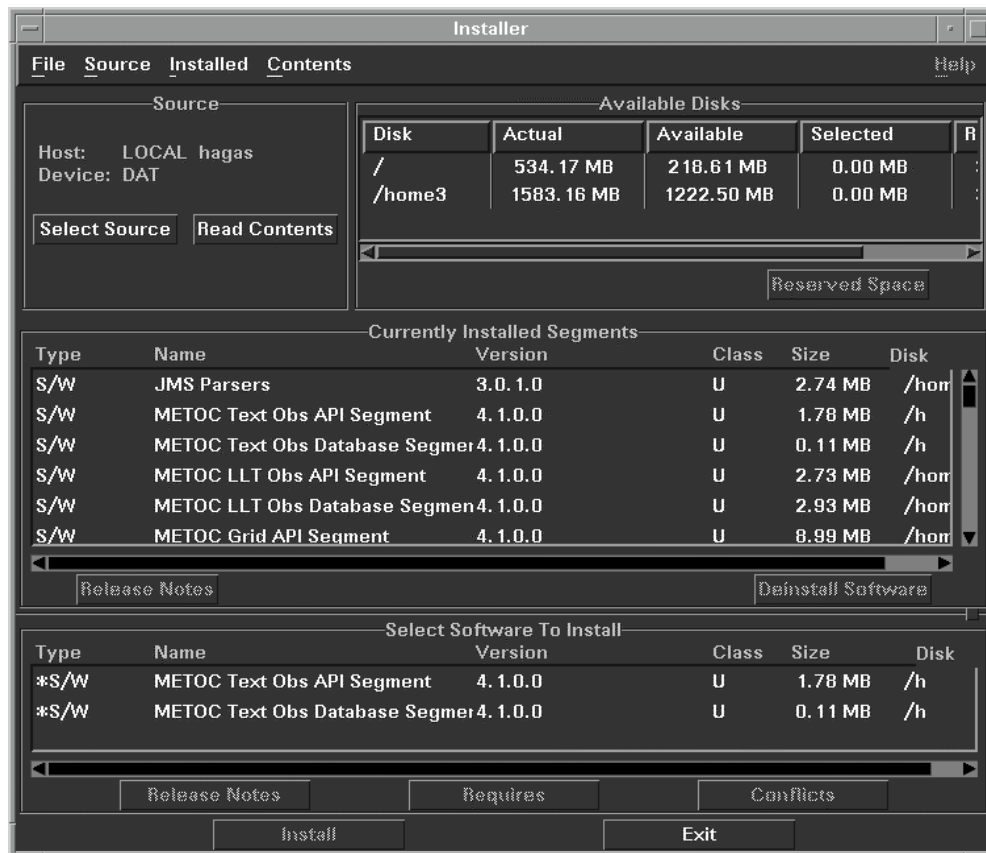


Figure B-1. HP-UX Segment Installer

Figure B-2 is a graphic example of the Install Shield on the Windows 4.0 NT system. Once installed, the Add/Remove Programs Properties window will have the MAIMG segment listed in the list provided.

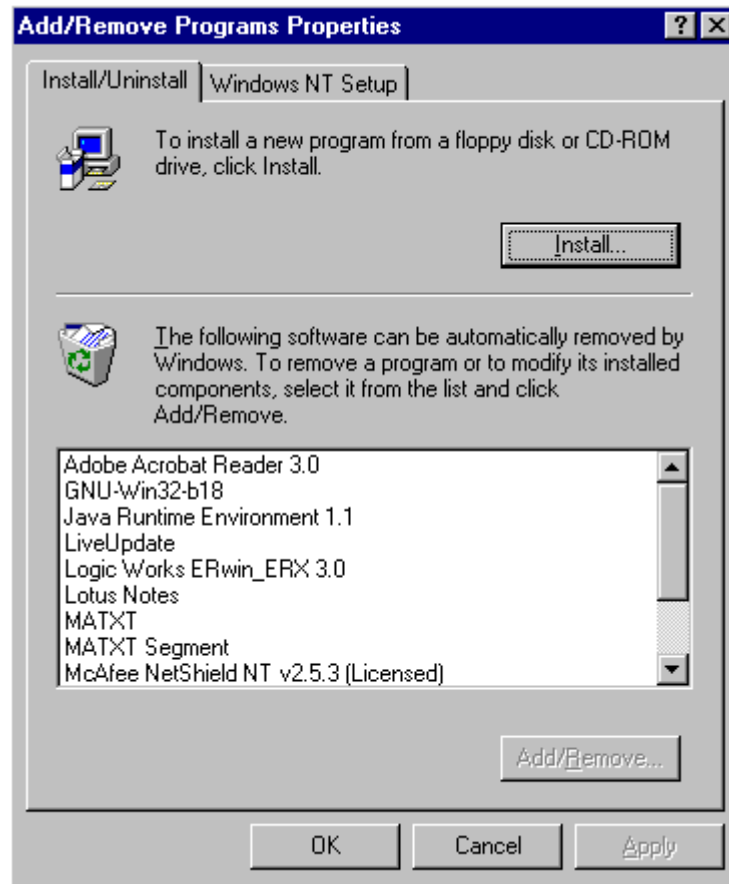


Figure B-1. Add/Remove Programs Properties Window

B.3.2 Imagery Data Ingest Test

The test data output and results are provided on the 3.5" floppy provided with this document. The file name is *Ingest*.

B.3.3 Imagery Get By ID Test

The test data output and results are provided on the 3.5" floppy provided with this document. The file name is *GetById*.

B.3.4 Imagery Get By Query Test

The test data output and results are provided on the 3.5" floppy provided with this document.
The file name is *GetByQry*.

B.3.5 Imagery Catalog Listing Test

The test data output and results are provided on the 3.5" floppy provided with this document.
The file name is *Catalog*.

B.3.6 Imagery Get Types Info Test

The test data output and results are provided on the 3.5" floppy provided with this document.
The file name is *GetTypes*.

B.3.7 Updating an Existing Imagery Data Ingest Test

The test data output and results are provided on the 3.5" floppy provided with this document.
The file name is *Update*.

B.3.8 Deleting a Imagery Data Ingest Test

The test data output and results are provided on the 3.5" floppy provided with this document.
The file name is *Delete*.